

0.2
0.05
0.025

Q2. It is required to drive Tx C pin of a USART with either of the following square wave frequencies (as selected by 2-switches connected to port PC0 and PC1):

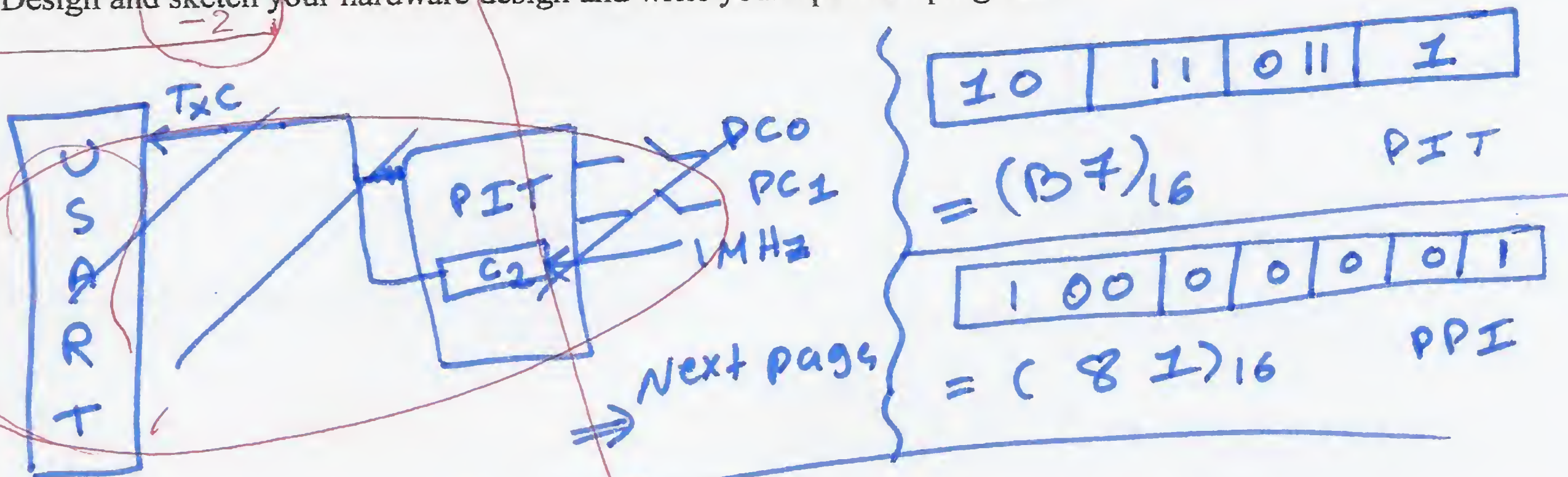
5 kHz, when PC1 PC0 = 00

10 kHz, when PC1 PC0 = 01

20 kHz, when PC1 PC0 = 1X

To be generated by the second counter of the PIT. Assume PIT clock of 1 MHz.

Design and sketch your hardware design and write your optimum program.



N - for (00) $\frac{1\text{MHz}}{5\text{kHz}} = 200$ | - for (1X) $\frac{1\text{MHz}}{20\text{kHz}} = 50$

N - for (0001) $\frac{1\text{MHz}}{10\text{kHz}} = 100$

~~MOV DX, OFFE6
MOV AL, 81
OUT DX, AL
MOV DX, OFFE4
IN AL, DX
AND AL, 03
CMP AL, 00
JE DLY5
CMP AL, 01
JE DLY10
CMP AL, 02
JE DLY15
MOV DI, 1
MOV DX, OFFFF
MOV~~

MOV DX, OFFE6
MOV AL, 81
OUT DX, AL
MOV DX, OFFE4
IN AL, DX
AND AL, 03
MOV BH, AL
MOV DX, OFFFF
MOV AL, 0B7
OUT DX, AL
MOV DX, OFFFD
CMP BH, 00
JE FIVE
CMP BH, 01
JE TEN
MOV AL, 50
OUT DX, AL
MOV AL, 00
OUT DX, AL
HLT

FIVE: MOV AL, 00
OUT DX, AL
MOV AL, 02
OUT DX, AL
HLT

TEN: MOV AL, 00
OUT DX, AL
MOV AL, 01
OUT DX, AL
HLT

50
-2